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## **When I say...preparedness**

**Bryan Burford & Gill Vance**

**School of Medical Education, Newcastle University**

Contact [bryan.burford@newcastle.ac.uk](mailto:bryan.burford@newcastle.ac.uk)

Medical education researchers often want to predict the future; to know if teaching programmes or interventions will produce safe and competent doctors. Assessments tell us about students *now*, under examination conditions, but how they will perform *in the future*, in ‘messy’ workplaces, remains unknowable. The real-life performance of new doctors is hard to measure, and too confounded for links to specific educational experiences to be robust.

Hence the concept of ‘preparedness’ has gained popularity in educational research and policy. If students feel ‘prepared for practice’, we assume, then intended educational outcomes have been achieved<sup>1</sup>. Despite variable evidence of a relationship with performance<sup>2</sup>, the value of the concept lies in its being, if not quite a crystal ball, then implicitly a proxy for future performance.

However, on closer consideration the concept is less than clear. Operationalisation of the term, and its connotations, varies. So when we say ‘preparedness’, we must be clear what exactly we mean. Or rather, when we *ask* “Are you prepared....?”, we must consider what question research participants actually *hear*.

*“Are you going to be competent?”*

This is the usual intent, and the question we hope will be answered. However, the future is unknowable, and responses will involve some judgement of likelihood – “*How*

*likely am I to be competent?”* – judgement that is subject to well-documented cognitive biases<sup>3</sup>.

*“Are you competent right now?”*

Being prepared may be understood as being competent in the terms of the latest available evidence, so the question may be interpreted as *“Have you done well in your exams?”*. Such judgements are at best redundant as the assessment data already exists, but are also vulnerable to cognitive biases in recall and interpretation.

*“Do you feel capable?”*

Rather than attempt to calculate likely performance, respondents may report a judgement of, or belief in, their own capability: ‘self-efficacy’<sup>4</sup>. This is often associated with performance, but the relationship can be complex, and mediated by factors such as task complexity<sup>5</sup>.

*“Are you nervous?”*

Feelings of preparedness may also reflect more general emotional states such as confidence or anxiety about entering a workplace. These may arise from (un)familiarity with the role, the physical workplace or its associated culture, staff and procedures. Anxiety may also arise from explicit concerns (e.g. about potential stress or bullying) or be linked to personality variables such as neuroticism<sup>6,7</sup>.

*“Have you learnt the right things?”*

As well as ‘being prepared *for*’, preparedness may also mean ‘being prepared *by*’, with the object being the course, rather than the individual. Some studies do this explicitly, with questions such as ‘My experience at medical school prepared me well...’<sup>7</sup> rather than ‘Do you feel prepared...’<sup>8</sup>. In the former case the respondent must effectively parse two questions: not only ‘Do you feel prepared?’, but also ‘Is that due to the

course?’. Such an approach also confounds the questions ‘What did you learn?’ and ‘What were you taught?’.

*“Were you competent?”*

Finally, the framing of the question as prospective (‘Are you prepared?’<sup>8</sup>) or retrospective (‘Were you prepared?’<sup>7</sup>) is important. The retrospective question asks for a respondent’s perception of their performance following transition, and so *may* provide a better estimate of actual performance than a prediction. However, the definition of ‘performance’ may itself vary subjectively. Additionally, such perceptions will still be open to biases; cognitive biases affecting recall of performance, but also contextual biases arising from variability in new doctors’ experiences. Doctors vary in the timing of the clinical exposure necessary to judge whether they were prepared, meaning that the influence of undergraduate training may be confounded by intervening experience in practice. Other retrospective views of preparedness may be gained from new doctors’ colleagues<sup>8</sup>, but these constitute an essentially different construct, referent to a group rather than individual performance. Nonetheless they are vulnerable to similar sources of uncertainty.

‘Preparedness’ is therefore a problematic term, which does not map to a single unambiguous construct. This undermines its construct validity, and so its *utility* as a concept (whether it is operationalised quantitatively or qualitatively). While the vernacular sense of describing doctors as ‘prepared’ or ‘unprepared’ remains useful, the rigour of academic discussion may be improved by specifying the precise construct we mean – performance, competence, confidence – when we say ‘preparedness’.

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